COMMONWEALTH OF VIRGINIA
Department of Environmental Quality
Division of Water Quality Programs
Ellen Gilinsky, Ph.D., Director

Subject: Guidance Memo No. 06-2xxx - - ***DRAFT***
Permitting considerations for facilities in the Chesapeake Bay watershed
To: Regional Directors, Deputy Regional Directors, Regional Water Permit Managers
From: Ellen Gilinsky, Ph.D., Director
Date:
Copies: James Golden, Rick Weeks, CBP staff, OWPP staff, OWE staff

Summary:

The purpose of this guidance is to provide instructions for establishing nutrient limits and offset requirements in VPDES permits for dischargers to the Chesapeake Bay. The guidance replaces Guidance Memorandum GM 05-2009, "VPDES Nutrient Limitations for Significant Dischargers to the Chesapeake Bay Watershed" and reflects key changes made as a result of the requirements of 9 VAC 25-40 (Policy for Nutrient Enriched Waters), 9 VAC 25-720 (Water Quality Management Plan), § *62.1-44.19:15 of the Code of Virginia* (as of July 1, 2005)(establishing treatment technology and offset requirements for new and expanded facilities in the Chesapeake Bay watershed) and *9 VAC 25-820-10* et seq., *General VPDES Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Watershed in Virginia*.

This guidance outlines registration requirements, effluent limits and monitoring requirements, offset considerations and other permit conditions for facilities subject to the aforementioned regulations. *This guidance does not apply to existing non-significant dischargers that have not proposed expansion of their facilities.*

Electronic Copy:

An electronic copy of this guidance in PDF format is available for staff internally on DEQNET, and for the general public on DEQ's website at:

Contact Information:

Please contact Kyle Ivar Winter, P.E., Office of Water Permit Programs, at (804) 698-4182 or kiwinter@deq.virginia.gov with any questions regarding the application of this guidance.

Disclaimer:

This document is provided as guidance and, as such, sets forth standard operating procedures for the agency. However, it does not mandate any particular method nor does it prohibit any particular method for the analysis of data, establishment of a wasteload allocation, or establishment of a permit limit. If alternative proposals are made, such proposals should be reviewed and accepted or denied based on their technical adequacy and compliance with appropriate laws and regulations.

1. Introduction

Background: On March 24, 2005, Governor Mark Warner signed legislation authorizing a Chesapeake Bay Watershed Nutrient Credit Exchange Program and directing DEQ to issue a WGP for significant point source discharges of nutrients to the Chesapeake Bay and its tributaries. This legislation also required that as of July 1, 2005, new and expanded dischargers to the Chesapeake Bay and its tributaries shall obtain offsets for the nutrients discharged to state waters. The WGP regulation, *9 VAC 25-820-10 et seq. – General VPDES Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Watershed in Virginia*, (referred to in this guidance as the "WGP"; individual permits will be referred to simply as "IPs") was approved by the SWCB at its September 6, 2006 meeting; the requirements of this regulation extend to the IPs held by new and expanded facilities. Facilities subject to this regulation are required to register for coverage under the WGP in addition to their existing IPs.

Purpose: The purpose of the guidance is to help regional permit staff process IP applications consistently and accurately in accordance with the Chesapeake Bay nutrient regulations. Each section of this guidance contains the legislative background to the regulations and the recommended action to be taken by the regional permit staff. The guidance also features a table that should help the permit staff identify appropriate requirements for a given facility's situation, and contains sample correspondence for use by regional permit staff.

The general impact of the various nutrient regulations on IP processing is listed below:

- The loading limits in the WGP, *at the time they become effective* for the respective facilities, supersede loading limits in IPs that:
  - are directed toward restoration and protection of the Chesapeake Bay, and
  - became effective *prior to* January 1, 2007.

- The schedule of compliance in the WGP supersedes schedules of compliance for loading limits in IPs that:
  - are directed toward restoration and protection of the Chesapeake Bay, and
  - were to become effective *on or after* January 1, 2007.

- Several IPs contain concentration limits that are intended to apply to facilities that have neither been constructed, nor been issued a Certificate to Construct for nutrient removal equipment. These limits must be revisited in accordance with this guidance; the permit writer and permittee may decide on the appropriate timing of the revision of these limits in the IP.

- The monitoring and reporting requirements in the WGP supersede those in IPs where the monitoring is not necessary to demonstrate compliance with an effective limit in the IP. This monitoring may be deleted from DMRs associated with IPs; OWPP and OWC are developing procedures for how to do this.

- The WGP requirement that facilities submit a compliance plan (and that facilities submit annual updates to the plan) supersedes the Basis of Design (BoD) and Interim Operability Plan (IOP) requirements in IPs.

- The WGP does not address site specific water quality conditions related to nutrients (e.g., TMDLs); both the WGP and IPs may contain loading limits, monitoring requirements and schedules of compliance as dictated by site specific water quality conditions, and it is possible that a facility may be generating and selling credits based on compliance with its WGP load limit while violating the load limit in the facility's IP. Likewise, local water quality issues may impact a facility's ability to acquire

credits in order to comply with the load limit in the WGP, and how multiple facilities under common ownership or operation may be able to aggregate or "bubble" their load limits.

- The WGP does not address technology-based limits (e.g., FEGs for industrial dischargers, NEW limits) and allows that IPs may include concentration-based limits based on nutrient technology installed, whether by new construction, expansion or upgrade. It is possible that a facility may be generating and selling credits based on compliance with its WGP load limit while violating concentration limits in the facility's IP. Likewise, facility-specific concentration limits may require facilities that have been aggregated or "bubbled" by registration with other facilities under common ownership or operation to operate their treatment technology to a higher standard than would be otherwise required for the owner/operator to comply with the aggregated or "bubbled" load limit.

Impact of pending regulations upon this guidance: DEQ is developing regulations for the reclamation and reuse of wastewater (9 VAC 25-740). Permittees will have the option of reducing the loads discharged by reclaiming and reusing their treated wastewater in accordance with this regulation; this may result in permittees proposing to install treatment technology less stringent than what would otherwise be required under the nutrient regulations. This may also result in the owners/operators of new and expanded dischargers proposing to acquire fewer load reductions to offset their waste loads discharged from their facilities. The basis for this option can be found in by *§ 62.1-44.19:13. of the Code of Virginia:*

> *"Biological nutrient removal technology" means (i) technology that will achieve an annual average total nitrogen effluent concentration of eight milligrams per liter and an annual average total phosphorus effluent concentration of one milligram per liter, or (ii) equivalent reductions in loads of total nitrogen and total phosphorus through the recycle or reuse of wastewater as determined by the Department.*
>
> *"State-of-the-art nutrient removal technology" means (i) technology that will achieve an annual average total nitrogen effluent concentration of three milligrams per liter and an annual average total phosphorus effluent concentration of 0.3 milligrams per liter, or (ii) equivalent load reductions in total nitrogen and total phosphorus through recycle or reuse of wastewater as determined by the Department.*

If a permittee provides, as part of their compliance plan (for significant dischargers) or in their registration statement (for new and expanding facilities) a demonstration that reclamation and reuse of water will result in their being able to meet their load limit without the installation of nutrient removal technology that might otherwise be required, DEQ may approve this option, with the implication that any concentration limits in the IP will be based on the actual treatment technology installed at the facility.

2. Application for IPs and registration for coverage under the WGP:

A. Legislative and regulatory requirements:

Existing significant dischargers are addressed by *§ 62.1-44.19:14.C.5. of the Code of Virginia* as follows:

> "..every owner or operator of a facility authorized by a Virginia Pollutant Discharge Elimination System permit to discharge 100,000 gallons or more per day, or an equivalent load, directly into tidal waters, or 500,000 gallons or more per day, or an equivalent load, directly into nontidal waters (shall) secure WGP coverage by filing a registration statement with the Department within a specified period after each effective date of the WGP."

OWPP has already sent registration statements to these facilities, and has issued coverage to the facilities as the registration statements are reviewed and approved. OWPP is also populating the CEDS database for these facilities. CEDS data rules for this permit will be included in the CEDS users' manual.

New and expanded facilities are addressed by *§ 62.1-44.19:14.C.5. of the Code of Virginia* as follows:

> "..any owner or operator of a facility authorized by a Virginia Pollutant Discharge Elimination System permit to discharge 40,000 gallons or more per day, or an equivalent load, directly into tidal or nontidal waters (shall) secure WGP coverage by filing a registration statement with the Department at the time he makes application with the Department for a new discharge or expansion that is subject to an offset or technology-based requirement in § 62.1-44.19:15…"

9 VAC 25-820-10 states:

> "New discharge" means any discharge from a facility that did not commence the discharge of pollutants prior to July 1, 2005, except that the term does not apply in those cases where a Certificate to Construct (for sewage treatment works, or equivalent DEQ approval for discharges from industrial facilities) was issued to the facility on or before July 1, 2005… "Expansion" or "expands" means initiating construction at an existing treatment works after July 1, 2005 to increase design flow capacity, except that the term does not apply in those cases where a Certificate to Construct (for sewage treatment works, or equivalent DEQ approval for discharges from industrial facilities) was issued on or before July 1, 2005.

B. Recommended Actions:

When reviewing IP applications for new and expanding facilities, regional permit staff should alert the applicant to the WGP registration requirement, and provide registration statements as part of the application package for the IP, as applicable. This guidance provides sample correspondence (see Attachment A).
Regional staff should send registration packages to new and expanded facilities that are already subject to these requirements, as they are required by law to register for coverage.

Eligibility for WGP coverage is restricted to facilities already holding an IP for the activity in question.

Since the offset requirement clearly links information provided in the WGP registration statement to compliance conditions in the IP, permit staff should recognize that an IP application for new and expanded facilities is only complete when the registration statement is complete.

OWPP is aware that since the passage of Senate Bill 1275, applicants have negotiated IPs without being able to anticipate the conditions under which offsets may be acquired; also, until DEQ finalizes policies pertaining to offset acquisition, these permittees may not be able to declare how their proposed waste loads will be offset. DEQ will grant WGP coverage to these permittees, with the condition that a Certificate to Operate will not be issued for the new or expanded facility until an offset declaration has been received and approved by the Department. Suggested IP language to address this situation can be found on Page 13 of this guidance.

Once the policies pertaining to offset acquisition have been finalized, applicants for new and expanded facilities must demonstrate that they can fulfill the offset requirement in *§ 62.1-44.19:15.B.1.b. of the Code of Virginia* as a prerequisite for any associated IP application submitted to DEQ. No IP processing should be undertaken for such applicants who fail to make this demonstration.

OWPP intends that new and expanded facilities concurrently apply for the IP and WGP according to the following timeline:

1) Facility submits a registration statement to OWPP concurrently with submittal of an IP application to the regional office.

2) OWPP reviews the registration statement and the plan for offsetting additional loads, and
    i) Compares any proposed purchase of allocations from existing point source to the allocations on the registration list to determine whether the purchase is
        (a) In the same tributary as the proposed discharge;
        (b) Whether the exchange would affect any requirement to comply with local water quality-based limitations, and
        (c) Whether the proposed seller is capable of selling the pounds listed on the application.
    ii) Verifies (with assistance from DCR) that any proposed purchase of an allocation from non-point source BMP is
        (a) In the same tributary as the proposed discharge;
        (b) Whether the exchange would affect any requirement to comply with local water quality-based limitations, and
        (c) Whether the proposed seller is capable of selling the pounds listed on the application.
    iii) If no allocation is available for purchase through i) or ii), coordinates acquisition of allocation through Water Quality Improvement Fund (WQIF), or reviews facility-specific plan for offsetting the expanded discharge;
    iv) Populates the CEDS database with relevant links to the IP, and
    v) Forwards registration statement to regional office for continued processing.

3) Regional office performs concurrent review of IP application; the IP application is deemed complete only after the registration statement is deemed complete.

4) Regional office completes the IP action; when the IP is signed, the regional office grants coverage under the WGP and completes the relevant CEDS data entry.

Expanding facilities that are currently non-significant dischargers will be subject to load limits that will be derived from their current design flows and installed nutrient removal technology (for industrial facilities, current effluent nutrient concentrations may be a consideration); because of this, regional office staff should refrain from waiving nutrient testing requirements contained in Form 2A and/or 2C unless the facility has previously submitted a large body of data.

3. Loading limits:

A. Legislative and regulatory requirements:

The load limits in the WGP are derived from one of three sources, and, in accordance with the enabling legislation, are to be expressed to the nearest pound (the regulation notes that this is without regard to the rules of mathematical precision):

- **Significant dischargers** have a waste load allocation in the Water Quality Management Planning Regulation (9 VAC 25-720). These wasteload allocations represent DEQ's best professional judgment as to the effluent limitations necessary to meet the Board's general criteria (9 VAC 25-260-20), which requires control of substances which nourish undesirable or nuisance aquatic life, and the Clean Water Act and the VPDES regulation require compliance with these limitations "as soon as possible".

- **Expanding non-significant dischargers** are not included in 9 VAC 25-720, which implies that these facilities do not have a waste load allocation; however, *§ 62.1-44.19:15 A.1. of the Code of Virginia* contains the phrase "expansion beyond his waste load allocations or permitted design capacity as of July 1, 2005". "Permitted design capacity" (or "permitted capacity, in § 62.1-44.19:15 A.2., A.3) refers to the nutrient load discharged by a non-significant discharger (for a municipal facility, this is based on the facility's design flow and treatment technology; industrial facilities must be considered on a case-by-case basis) and is defined in 9 VAC 25-820-10.

- No waste load allocation or "permitted design capacity" is provided to **new facilities** in either the law or the regulations.

The WGP supersedes limits already in effect in the IPs of the facilities affected by this new regulation. Per the code, the WGP shall control in lieu of technology-based, water quality-based, and best professional judgment, interim or final effluent limitations for total nitrogen and total phosphorus in IPs for facilities covered by the WGP where the effluent limitations for total nitrogen and total phosphorus in the IPs are based upon standards, criteria, waste load allocations, policy, or guidance established to restore or protect the water quality and beneficial uses of the Chesapeake Bay or its tidal tributaries.

DEQ intends that mass loading limits for nutrient limits in IPs *that are currently in effect and enforceable will remain so until the effective date of the nutrient limits in the WGP for the tributary and parameter of concern* (i.e., currently the January 1, 2011 "final effluent limits effective date" in Part I of the WGP), and that such limits include:

- Water quality based mass load limits such as those prescribed by basin management plans, nutrient enriched waters designations and Total Maximum Daily Loads (TMDLs);
- Performance based mass load limits established for significant dischargers in accordance with GM04-2017;
- Water Quality Improvement Fund (WQIF) projects or other grant stipulations that imposed nutrient treatment performance requirements expressed as mass load limitations, and
- Mass loading limits based on Federal Effluent Guidelines for industrial process water.

DEQ remains authorized to establish and enforce more stringent effluent limitations for total nitrogen or total phosphorus in IPs, as necessary; DEQ intends that the mass loading limits in the WGP will <u>not</u> supersede either:

- More stringent water quality based nutrient limits in IPs needed to protect local water quality;
- More stringent technology-based effluent concentration limits for facilities that have installed nutrient control technology, or
- More stringent mass loading limits based on Federal Effluent Guidelines for industrial process water.

Facilities may have loading limits in both the WGP and the facility's IP.

Several IPs have included schedules of compliance associated with loading limits. DEQ intends that the tributary wide schedules of compliance in the WGP supersede conflicting or duplicative compliance schedules for nutrient limits in those IPs whose final effluent (nutrient) limit compliance dates have not passed, as of the effective date of the WGP (January 1, 2007).

By letter dated November 30, 2006, EPA Region 3 expressed concurrence with this approach to addressing existing load limits in IPs (see Attachment B to this guidance).

B. Recommended actions:

Existing significant dischargers not contemplating expansion beyond their waste load allocations in 9 VAC 25-720:

Except for those circumstances in which site-specific or facility-specific conditions warrant the inclusion of limits more stringent than those in the WGP, no loading limits or compliance schedules are required when reissuing or modifying IPs for any significant dischargers in the Chesapeake Bay Watershed. In addition, BoD and IOP submittals are not required and are now moot in any IP that contains them.

Expanding facilities:

As previously discussed, the annual loading limit for total nitrogen and total phosphorus for these facilities is what is referred to in the legislation as "waste load allocations", (for facilities that received waste load allocations in the WQMP regulation) or "permitted (design) capacity" (for all other expanding facilities). **The loading limits will be contained in the registration list associated with the WGP.**

For facilities that are significant dischargers, the loading limit in the WGP will remain equal to the allocation for that facility that is contained in 9 VAC 25-720 (Water Quality Management Plan).

For municipal facilities that are not currently significant dischargers (i.e., they have no allocation in 9 VAC 25-720), the "permitted design capacity" or "permitted capacity" should be calculated using the following formula (industrial facilities should be considered on a case-by-case basis; contact OWPP for assistance):

> **Total N or P (in pounds/yr, to the nearest whole pound) = concentration (mg/l, to the nearest 0.01 mg/d) x design flow (mgd, to the nearest 0.01 MGD) x 8.3438 x 365 (days/yr), where (Eq.1)**
> Concentration = the appropriate value from Table 1 (below), and
> Design flow = the design flow for the facility from which the facility was discharging as of July 1, 2005, or the design flow for a proposed facility for which a Certificate to Construct was issued prior to July 1, 2005, whichever is greater. Note that the Biological Nutrient Removal and Limit of Technology concentrations listed below should only be used if those levels of treatment were required by the IP or a grant agreement with DEQ.

Table 1
Summary of technology based concentration limits for total nitrogen and total phosphorus

Parameter	Level of technology (when calculating "permitted design capacity", consider the level installed that corresponds to the "design flow" used)	Concentration (mg/l)
Total N	Secondary	18.70
	Biological Nutrient Removal	8.00
	Limit of Technology	3.00
Total P	Secondary	2.50
	Biological Nutrient Removal	1.00
	Limit of Technology	0.30

An example of this follows:

An STP west of the fall line, constructed in 1995 to provide secondary treatment at a design flow of 0.40 MGD is expanding to 0.60 MGD. A CTC for the 0.60 MGD plant was issued on October 1, 2005. There is no local water quality concern related to nutrients.

The facility is currently non-significant and has no allocation in the WQMP. The "permitted design capacity" is defined as

> ***Total N or P (in pounds/yr) = concentration (mg/l) x design flow (mgd) x 8.3438 x 365 (days/yr), where (Eq.1)***

Design flow – as of July 1, 2005, the approved flow was 0.40 MGD.
Concentration – the treatment provided as of July 1, 2005; use the values for secondary treatment on Table 1:

Total Nitrogen = 18.70 mg/l x 0.40 MGD x 8.3438 x 365 days/yr = 22780 pounds/yr
Total Phosphorus = 2.50 mg/l x 0.40 MGD x 8.3438 x 365 days/yr = 3045 pounds/yr

These numbers represent the loading limits that would be recorded by OWPP in the registration list for the 0.60 MGD expansion.

In addition, load reductions or waste load allocations that are acquired by expanding facilities to offset increases in their discharged waste loads will be recorded in the registration list.

New facilities:

New facilities will receive an annual load limit of zero, with no schedule of compliance in the WGP. Load reductions or waste load allocations that are acquired by new facilities to offset their discharged waste loads will be recorded in the registration list.

4. Technology requirements and concentration limits:

A. Legislative and regulatory requirements:

Both *§ 62.1-44.19:15.A. of the Code of Virginia* and 9 VAC 25-40-70, *Strategy for Chesapeake Bay Watershed*, address treatment technology requirements. 9 VAC 25-40-70 A states:

> "A. As specified herein, the board shall include technology-based effluent concentration limitations in the permit for any facility that has installed technology for the control of nitrogen and phosphorus *whether by new construction, expansion, or upgrade*. Such limitations shall be based upon the technology installed by the facility and shall be expressed as annual average concentrations."

A summary of the technology requirements in *§ 62.1-44.19:15.A. of the Code of Virginia* and 9 VAC 25-40-70 can be found in Table 2:

Table 2
Summary of treatment technology requirements for facilities located in the Chesapeake Bay watershed

Proposed design flow	New facility?	Receiving stream	Minimum Treatment technology
0.10 MGD > Q ≥ 0.04 MGD	No	Tidal or Non-Tidal	Secondary Treatment
0.10 MGD > Q ≥ 0.04 MGD	Yes	Tidal or Non-Tidal	Biological Nutrient Removal
0.50 MGD > Q ≥ 0.10 MGD		Non-Tidal	Biological Nutrient Removal
Q ≥ 0.10 MGD		Tidal	Limit of Technology
Q ≥ 0.50 MGD		Non-Tidal	Limit of Technology

These requirements are not universal. *§ 62.1-44.19:16. A. of the Code of Virginia* and 9 VAC 25-40-70 A.4. allow less stringent requirements for new and expanding facilities, in that on a case-by-case basis, DEQ may establish a technology-based standard and associated concentration limitation less stringent than the technology standards summarized in Table 2 above, based on a demonstration by an owner or operator that the specified standard is not technically or economically feasible for the affected facility or that the technology-based standard and associated concentration limitation would degrade receiving waters or require the owner or operator to construct treatment facilities not otherwise necessary to comply with his waste load allocation (or permitted design capacity) without reliance on nutrient credit exchanges pursuant to *§ 62.1-44.19:18 of the Code of Virginia.* This guidance includes an example of when this demonstration may be acceptable.

Another exception to the technology requirement can be found in 9 VAC 25-40-70 B.:

> "In accordance with *Article 1.1 (§ 10.1-1187.1 et seq.) of Chapter 11.1 of Title 10.1 of the Code of Virginia*, the board may approve an alternate compliance method to the technology-based effluent concentration limitations as required by subsection A of this section. Such alternate compliance method shall be incorporated into the permit of an Exemplary Environmental Enterprise (E3) facility or an Extraordinary Environmental Enterprise (E4) facility to allow the suspension of applicable technology-based effluent concentration limitations during the period the E3 or E4 facility has a fully implemented environmental management system that includes operation of installed nutrient removal technologies at the treatment efficiency levels for which they were designed. "

Suggested IP language to address this situation can be found on Page 12 of this guidance.

On occasion, more restrictive limits may be necessary. DEQ is authorized by *§ 62.1-44.19:14.B. of the Code of Virginia* and 9 VAC 25-40-70 A.5. to establish and enforce more stringent water quality-based effluent limitations for total nitrogen or total phosphorus in IPs where those limitations are necessary to protect local water quality, or as a result of technology installed (i.e., through the WQIF). The exchange or acquisition of credits pursuant to this article shall not affect any requirement to comply with such local water quality-based limitations.

B. Recommended Actions:

Concentration limits cannot be assumed when developing a IP for a significant discharger. Table 3 (below) is a summary of the concentration limits used to calculate waste load allocations in 9 VAC 25-720; a facility-specific list for each tributary can be found at http://www.deq.virginia.gov/bay/multi.html.

Table 3
Summary of concentrations used to derive WLAs for significant dischargers located in the Chesapeake Bay watershed

Basin	TN (mg/l)	TP (mg/l)
Shenandoah and Free Flowing Potomac	4.00	0.30
Tidal Potomac	3.00	0.30 (0.18 for embayments; 0.10 for Dulles watershed)
Rappahannock	4.00	0.30
Eastern Shore	4.00	0.30
York	6.00	0.70
James (above fall line and tidal fresh water)	6.00	0.50 (0.10 for Chickahominy)
James (lower estuary)	12.75	1.00

Significant dischargers may invoke *§ 62.1-44.19:16. A. of the Code of Virginia* when proposing treatment technology for their facilities; when this occurs, regional permit staff should alert OWE staff to this. Unless the permittee has indicated that the compliance plan (required by the WGP) includes the acquisition of nutrient credits to compensate for the installation of less stringent treatment technology, the lesser of BNR concentrations or the concentrations listed in Table 3 should be the least stringent performance criteria for the proposed treatment works, and should be included in the IP as annual average concentration limits. More stringent concentration limits should NOT be included in the IPs for significant dischargers unless the permittee commits during IP development to a given standard of performance (signing a grant agreement with more stringent concentration would be an example of such a commitment); unless this occurs, more stringent limits based on the actual technology installed (whether by expansion or upgrade) should be included in the first permit action following the issuance of a CTC for the installation of nutrient control technology.

Contact OWPP in cases where the permittee makes a request for alternate technology in accordance with *§ 62.1-44.19:16. A. of the Code of Virginia*; in addition, the permit writer should consider the applicability of (but not limited to) federal effluent guidelines, local water quality standards and TMDL waste load allocations.

If multiple factors are applicable to a discharger, the permit writer should apply the most stringent of the applicable limits; barring one of these situations, the permit writer should apply the concentration limits listed in Table 1 to the permittee, effective with the issuance of a CTO for the new, expanded or upgraded facility.

The following example builds upon the previous one, and shows where the permittee may not need a technology based concentration limit in order to comply with its wasteload allocation or permitted design capacity.

The concentration limits for the 0.60 MGD expansion, taken from Table 1, correspond to LOT:

Total Nitrogen = 3.00 mg/l
Total Phosphorus = 0.30 mg/l
However, the permittee may be able to demonstrate that it is unnecessary to install and operate LOT to comply with the loading limit: Examining the respective limits with regard to the 0.60 MGD flow:

$$\textbf{Concentration limit (mg/l)} = \frac{\textbf{WLA or permitted design capacity in pounds/yr (see above)}}{\textbf{365 days/yr x 8.3438 x proposed design flow (in MGD)}} \quad \textbf{(Eq.2)}$$

- *If calculated TN limit ≥ 8.00 mg/l, assign a limit of 8.00 mg/l for TN*

- *If 8.00 mg/l > calculated TN limit ≥ value from Table 3, assign a limit corresponding to the value from Table 3 for TN for facilities in the significant flow category or the calculated TN limit for facilities not expanding into the significant flow category*
- *If value from Table 3 > calculated TN limit ≥ 3.00 mg/l, assign a limit of 3.00 mg/l for TN for facilities in the significant flow category or the calculated TN limit for facilities not expanding into the significant flow category*
- *If 3.00 mg/l > calculated TN limit, assign calculated limit for TN*

- *If calculated TP limit ≥ 1.00 mg/l, assign a limit of 1.00 mg/l for TP*
- *If 1.00 mg/l > calculated TP limit ≥ value from Table 3, assign a limit corresponding to the value from Table 3 for TP TP for facilities in the significant flow category or the calculated TP limit for facilities not expanding into the significant flow category*
- *If value from Table 3 > calculated TP limit ≥ 0.30 mg/l, assign a limit of 0.30 mg/l for TP for facilities in the significant flow category or the calculated TP limit for facilities not expanding into the significant flow category*
- *If 0.30 mg/l > calculated TP limit, assign calculated limit for TP*

Total Nitrogen = $\frac{22870 \text{ pounds/yr}}{(365)(8.3438)(0.60)}$ = *12.52 mg/l*

Total Phosphorus = $\frac{3044 \text{ pounds/yr}}{(365)(8.3438)(0.60)}$ = *1.66 mg/l*

In this case, because the facility is expanding into the significant flow category (≥ 0.10 MGD in tidal waters or ≥ 0.50 MGD in nontidal waters), it would be required to install BNR as part of the facility expansion and would be issued annual average concentration limits in the IP of 8.00 mg/l for TN and 1.00 mg/l for TP.

It is also possible that the permittee will commit to installing treatment more rigorous than is required to comply with the applicable laws and regulations (i.e., a new facility that would be required to install BNR may choose to install LOT in order to minimize the mass of nutrients to be offset). In this case, the concentration limits would be determined by an evaluation of the technology proposed.

All IPs that contain annual concentration limits should contain the following special condition:

Nutrient reporting calculations:

For each calendar month, the DMR shall show the calendar year-to-date average concentration (mg/L) calculated in accordance with the following formulae:

$$MC_{avg}\text{-}YTD = \left(\sum_{(Jan\text{-}current\ month)} MC_{avg} \right) \div (\#\ of\ months)$$

where:
MC_{avg}*-YTD = calendar year-to-date average concentration (mg/L)(parameter codes 803 and 811)*
MC_{avg} *= monthly average concentration (mg/L) as reported on DMR*

The total nitrogen and phosphorus average concentrations (mg/L) for each calendar year (AC) shall be shown on the December DMR due January 10th of the following year. These values shall be calculated in accordance with the following formulae:

$$AC_{avg} = (\sum_{(Jan-Dec)} MC_{avg}) \div 12$$

where:
AC_{avg} = calendar year average concentration (mg/L)
MC_{avg} = monthly average concentration (mg/L) as reported on DMR

For Total Phosphorus, all daily concentration data below the quantification level (QL) for the analytical method used should be treated as half the QL. All daily concentration data equal to or above the QL for the analytical method used shall be treated as it is reported.

For Total Nitrogen (TN), if none of the daily concentration data for the respective species (i.e., TKN, Nitrates/Nitrites) are equal to or above the QL for the respective analytical methods used, the daily TN concentration value reported shall equal one half of the largest QL used for the respective species. If one of the data is equal to or above the QL, the daily TN concentration value shall be treated as that data point is reported. If more than one of the data is above the QL, the daily TN concentration value shall equal the sum of the data points as reported.

Regional permit staff should include the following language in any IP that includes a Total Nitrogen or Total Phosphorus annual average concentration limit:

The annual average concentration limitations for Total Nitrogen and/or Total Phosphorus are suspended during any calendar year in which the facility is considered by DEQ to be a participant in the Virginia Environmental Excellence Program in good standing at either the Exemplary Environmental Enterprise (E3) level or the Extraordinary Environmental Enterprise (E4) level, provided that the following conditions have also been met:

a. The facility has applied for (or renewed) participation, been accepted, maintained a record of sustained compliance and submitted an annual report according to the program guidelines;
b. The facility has demonstrated that they have in place a fully implemented environmental management system (EMS) with an alternative compliance method that includes operation of installed nutrient removal technologies to achieve the annual average concentration limitations, and
c. The E3/E4 designation from DEQ and implementation of the EMS has been in effect for the full calendar year.

The annual average concentration limitations for Total Nitrogen and/or Phosphorus, as applicable, are not suspended in any calendar year following a year in which the facility failed to achieve the annual average concentration limitations as required by b. above.

5. Requirements to offset additional discharged pounds of nitrogen and phosphorus:

A. Legislative requirement:

§ 62.1-44.19:15. A. of the Code of Virginia requires owners or operators of expanded facilities to offset any increase in delivered total nitrogen and delivered total phosphorus loads resulting from any expansion beyond the waste load allocations or permitted design capacity as of July 1, 2005, and requires owners or operators of new facilities to offset the entire delivered total nitrogen and total phosphorus loads discharged.

§ 62.1-44.19:15. B. of the Code of Virginia outlines four options for obtaining such offsets:

- Acquisition of all or a portion of the waste load allocations from one or more permitted facilities in the same tributary;
- Acquisition of nonpoint source load allocations through the use of best management practices acquired through a public or private entity acting on behalf of the land owner. Such best management practices shall achieve reductions beyond those already required by or funded under federal or state law, or the Virginia tributaries strategies plans, and shall be installed in the same tributary in which the new or expanded facility is located and included as conditions of the facility's IP;
- Acquisition of allocations from the Water Quality Improvement Fund, or
- Acquisition of allocations in accordance with the terms of the WGP or through such other means as may be approved by the Department on a case-by-case basis.

Currently, OWPP, with assistance from DCR, is developing the mechanisms by which facilities would comply with *§ 62.1-44.19:15.B*.

B. Recommended Actions:

Expanded facilities must offset any load in excess of their waste load allocations (for facilities that are significant dischargers) or "permitted design capacity" (for facilities that are non-significant dischargers). New facilities must offset their entire load. **Several categories of facilities will not require offset conditions in their IPs:**

- Facilities that, with the submittal of a registration statement, provide evidence that a waste load allocation was acquired from a significant discharger whose loading limits have become effective (in this case, the registration list and DMRs of the affected facilities will be revised to reflect the amount and term of the waste load acquisition);
- Facilities that have acquired waste load allocation or permitted design capacity through regionalization;
- Facilities that are being "bubbled" with other facilities in the same tributary under common ownership or operation, and
- Facilities purchasing offsets through the Water Quality Improvement Fund.

The load limits of these facilities will be included in the registration list, according to the mass of nutrients acquired.

Until the final procedures for review and approval of offsets have been developed by OWPP, regional staff should include the following language in IPs for facilities that are required to offset nutrient waste loads from their facilities, whether by new construction or by expansion:

> *"Any annual Total Nitrogen and/or Total Phosphorus loadings above and beyond those permitted prior to July 1, 2005 shall be offset subject to a DEQ-approved trading contract prepared in accordance with sections 62.1-44.19:12 - :19 of the law and 9 VAC 25-820-10 et seq., and including, but not limited to the following:*
>
> *a. Discussion of the source of the acquired allocations,*
> *b. Discussion of other permitted facilities involved in the trade, and*
> *c. Discussion of any non-point source allocations acquired.*
>
> *"This proposal shall be approved prior to the issuance of a Certificate to Operate for the new or expanded facility. Once approved, the conditions of the proposal pertaining to verification of non-point*

allocations acquired, or self-offsetting practices implemented, become an enforceable part of this permit."

Once the final procedures for review and approval of offsets have been developed by OWPP, regional staff should insert the following language in IPs for facilities that have elected to acquire non-point load reductions, or have submitted a proposal to offset their waste load themselves:

"The permittee has elected to offset the annual Total Nitrogen and/or Total Phosphorus loadings above and beyond those permitted prior to July 1, 2005 through (the acquisition of non-point source load reductions) or (through a proposal approved by the Department that involves (insert brief summary here)). Records of this acquisition shall be maintained on site by the permittee and are subject to field verification by, or on behalf of, the Department. Should the reductions not be verifiable, or should they be demonstrated not to have been achieved, the permittee shall be required to obtain any additional waste load or load reductions necessary to offset the waste load discharged by the permittee in the calendar year for which the load reductions were acquired .

Fact Sheet language follows:

Offset Requirement

Rationale: The Virginia General Assembly, in their 2005 session, enacted a new Article 4.02 (Chesapeake Bay Watershed Nutrient Credit Exchange Program) to the Code of Virginia to address nutrient loads to the Bay. Section 62.1-44.19:15 sets forth the requirements for new and expanded dischargers, which are captured by the requirements of the law, including the requirement that non-point load reductions acquired for the purpose of offsetting nutrient discharges be enforced through the individual VPDES permit.

An example of an offset calculation follows:

Assume the 0.40 MGD facility in the previous example had installed LOT treatment with grant money in 2000 and was now proposing an expansion to 0.60 MGD: Again referring to Table 2,

	Proposed TN Load = 3.00 mg/l x 0.60 MGD x 8.3438 x 365 days/yr	=	*5481 pounds/yr*
-	*Current TN Load = 3.00 mg/l x 0.40 MGD x 8.3438 x 365 days/yr*	=	*3655 pounds/yr*
	Required offset for expanded discharge	=	*1826 pounds/yr*
	Proposed TP Load = 0.30 mg/l x 0.60 MGD x 8.3438 x 365 days/yr	=	*548 pounds/yr*
-	*Current TP Load = 0.30 mg/l x 0.40 MGD x 8.3438 x 365 days/yr*	=	*365 pounds/yr*
	Required offset for expanded discharge	=	*183 pounds/yr*

The permittee in this example would have to demonstrate as part of its WGP registration that the waste load allocations had been secured and could be proven prior to the commencement of discharge from the new or expanded facility.

6. Additional permit language:

VPDES permits having Total Phosphorus limitations based on a Nutrient Enriched Waters designation should contain the following condition as appropriate (see note below):

Watershed General Permit Controls

> *Upon the effective date of the permittee's Watershed General Permit Total Phosphorus limitation, the monthly average and weekly (choose one average or maximum) Total Phosphorus loading limitations contained herein are waived.*

Note that this is only applicable to limits based on a Nutrient Enriched Waters designation. It is not applicable to any limitations required under a Special Standards designation (9 VAC 25-260-310) (e.g. Policy for the Potomac Embayments, Occoquan Watershed Policy, Chickahominy watershed above Walker's Dam, etc.) or any other more stringent limitations necessary to maintain local water quality.

Although it is a monthly rather than yearly average limit, the 2.0 mg/l NEW limit is considered a technology-based limit consistent with the intent of 9 VAC 25-40-70 (i.e. nutrient removal facilities are operated as designed). Anti-backsliding prevents removal of the limit until such time as the facility installs additional Phosphorus removal equipment and the limit is replaced by a new annual average concentration limit. While facilities operating under a "bubbled" registration receive some relief regarding compliance with the aggregate loading limit assigned to the joint owner/operator, "bubbling" does not relieve the individual facilities from the obligation to operate their nutrient removal facilities as designed.

7. Regionalization issues:

A. Legislative requirement:

§ 62.1-44.19:14.C.1. of the Code of Virginia, in describing the waste load allocations in the WGP, states:

> "…An owner or operator of two or more facilities located in the same tributary may apply for and receive an aggregated waste load allocation for total nitrogen and an aggregated waste load allocation for total phosphorus for multiple facilities reflecting the total of the water quality-based total nitrogen and total phosphorus waste load allocations established for such facilities individually."

This language actually addresses the aggregated or "bubbled" WGP registration of facilities under common ownership or operation that continue to operate under separate IPs. Considering that *§62.1-44.19:15 of the Code* refers to waste load allocations and "permitted design capacity" or "permitted capacity" for existing facilities in a synonymous manner, it stands to reason that a regional discharger, formed from the consolidated treatment of wastewater formerly treated by facilities located in the same tributary, should be able to aggregate the waste load allocations attributed to the affected facilities. The practice is extended (albeit partially) to the assumption of loads from facilities with permitted design capacities.

B. Recommended Actions:

Loading limits:

An owner who consolidates two or more facilities, located in the same tributary, into a single regional facility, may apply for and receive an aggregated mass load limit for delivered total nitrogen and an aggregated mass load limit for delivered total phosphorus, subject to the following conditions:

- If all of the affected facilities have waste load allocations in Subsection C of Sections 50, 60, 70, 110 and 120 of the Water Quality Management Planning Regulation (9 VAC 25-720), the aggregate mass load limit shall be calculated by adding the waste load allocations of the affected facilities. The regional facility shall be eligible to generate credits.

- If any, but not all, of the affected facilities has a waste load allocation in Subsection C of Sections 50, 60, 70, 110 and 120 of the Water Quality Management Planning Regulation (9 VAC 25-720), the aggregate mass load limit shall be calculated by adding:

  - Waste load allocations of those facilities that have wasteload allocations in Subsection C of Sections 50, 60, 70, 110 and 120 of the Water Quality Management Planning Regulation (9 VAC 25-720),

  - Permitted design capacities assigned to affected industrial facilities, and

  - Loads from affected sewage treatment works that do not have a waste load allocation in Subsection C of Sections 50, 60, 70, 110 and 120 of the Water Quality Management Planning Regulation (9 VAC 25-720), are considered the lesser of a previously established permitted design capacity or the loads calculated by the following formulae:

    Nitrogen Load (lbs/day) = flow (expressed as MGD to the nearest 0.01 MGD) x 8.0 mg/l x 8.3438 x 365 days/year

    Phosphorus Load (lbs/day) = flow (expressed as MGD to the nearest 0.01 MGD) x 1.0 mg/l x 8.3438 x 365 days/year

    Flows used in the preceding formulae shall be the design flow of the treatment works from which the affected facility currently discharges.

  - The regional facility shall be eligible to generate credits.

An example of this follows; consider a significant discharger that expands to accept the flows currently treated by two other POTWs located in the same tributary, as well as an industrial discharger.

Initial Design Flow of significant discharger:	*4.00 MGD*	
Nitrogen WLA and concentration:	*48,729 lbs/yr*	*4.00 mg/l*
Phosphorus WLA and concentration:	*3,655 lbs/yr*	*0.30 mg/l*

Design flows for STPs to be consolidated into the regional facility: 0.40 MGD and 0.20 MGD

Permitted design capacity for industrial discharger: 2,000 lbs/yr total nitrogen, 500 lbs/yr total phosphorus

Nitrogen WLA for regional STP = 48,729 + 2000 + [(0.40+0.20)(8.00 mg/l x 8.3438 x 365)] = 65,347 lbs/yr
Phosphorus WLA for regional STP = 3,655 + 500 + [(0.40+0.20)(1.00 mg/l x 8.3438 x 365)] = 5,982 lbs/yr

These limits would be included in the WGP registration list and the facility would be eligible to generate credits.

Concentration limits for the regional facility would be no less stringent than those for the existing facility, and could be more stringent depending on the technology installed at the regional facility.

- If none of the affected facilities have a waste load allocation in Subsection C of Sections 50, 60, 70, 110 and 120 of the Water Quality Management Planning Regulation (9 VAC 25-720), the aggregate mass

load limit shall be calculated by adding the respective permitted design capacities for the affected facilities. The regional facility shall not be eligible to generate credits.

An example of this follows; consider several non-significant POTWs, currently treating to secondary standards, which are replaced by a single regional POTW.

Design flows for STPs to be consolidated into the regional facility: 0.30, 0.30, and 0.20 MGD, respectively

Total Nitrogen = 18.70 mg/l x 0.80 MGD x 8.3438 x 365 days/yr = 45560 pounds/yr
Total Phosphorus = 2.50 mg/l x 0.80 MGD x 8.3438 x 365 days/yr = 6091 pounds/yr

These limits would be included in the WGP registration list and the facility would not be eligible to generate credits.

Concentration limits for this facility would be determined in a manner similar to that for a new or expanded facility.

In most cases, offsets should not be required for a regional facility unless the new facility will have a design flow significantly greater than the sum of the flows (in the case of STPs) or loads (in the case of industrial facilities) consolidated. In these cases, the permittee may have the option of selecting treatment sufficiently stringent to ensure the load resulting from the increased flow does not exceed the sum of the existing loads. Contact OWPP if you have any questions regarding this.

The following language should be used in IPs where it is reasonable to expect that the facility will terminate its discharge and connect to a regional facility:

Should (insert name of permittee) terminate its discharge by connecting to (insert name of regional facility), (insert name of regional facility) may apply for and receive an additional mass load limit in accordance with Part I.B.3. of 9 VAC 25-820-70. The additional mass load limits for nitrogen and phosphorus have been determined to be as follows (if calculated, provide formulae below):

Total Nitrogen: = [] lbs/year
Total Phosphorus: = [] lbs/year.

These nutrient loadings are to be assigned to the (regional facility) upon transfer of flow from the (insert name of permittee) and termination of this permit.

8. Public Notice Requirements:

A. Legislative and Regulatory Requirements:

§62.1-44.19:14 C.6 of the Code requires DEQ to establish "A procedure for efficiently modifying the lists of facilities covered by the WGP where the modification does not change or otherwise alter any waste load allocation or delivery factor adopted pursuant to the Water Quality Management Planning Regulation (9 VAC 25-270) or its successor, or an applicable total maximum daily load. The procedure shall also provide for modifying or incorporating new waste load allocations or delivery factors, including the opportunity for public notice and comment on such modifications or incorporations…"

Part I.I. of the WGP contains requirements that address modification or incorporation of new waste load allocations or delivery factors; however, in most cases, adequate notice will have been provided to the public through one of the following means:

1. An individual facility petitions DEQ-CBO for an expanded waste load allocation; as part of the response to this petition, DEQ-CBO subjects the petition to a public review and comment period. No further action is required of regional staff in this instance.

2. DEQ changes the delivery factors in the nutrient trading regulation (and, by extension, the load limits in the WGP); this would most likely be undertaken in conjunction with modification of the WGP and would already be subject to a public notice and comment requirement. Again, no further action is required of regional staff.

3. A facility submits a registration statement (or a modified registration statement) for WGP coverage in conjunction with an individual VPDES application for proposed new construction or expansion. In this case, the regional office will submit the IP to public notice and comment.

It is possible that a facility may submit a registration statement (or a modified registration statement) for WGP coverage, independently of an individual VPDES application for proposed new construction or expansion. Such a submittal may be predicated on a decision by an owner/operator to "bubble" facilities currently operating under independent WGP registrations, regionalization (with no attendant plant expansion) or a change in how a new or expanding facility offsets its discharge. If the regional office receives such a registration statement, contact OWPP for assistance.

B. Recommended Actions:

The following language should be added to public notices for facilities subject to this regulation:

This facility is subject to the requirements of 9 VAC 25-820 and has registered for coverage under the General VPDES Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Watershed in Virginia.

(add this sentence for <u>new</u> facilities only)

As a condition of this permit, this facility will be required to offset in advance, any loads of total nitrogen or total phosphorus that are expected to be discharged in a given calendar year.

(add this sentence for <u>expanding</u> facilities only)

As a condition of this permit, this facility will be required to offset in advance, any loads of total nitrogen or total phosphorus that are expected to be discharged in a given calendar year, in excess of those levels previously allowed by the facility's VPDES permit. The facility may opt to install nutrient removal treatment that will maintain the existing load of nutrients discharged.

(add this language when the facility is, or will be, <u>registered for coverage under the WGP with other facilities under common ownership or operation; in other words, "bubbled"</u>)

This facility is registered for coverage under the WGP with other facilities under common ownership or operation in the (name of tributary) watershed.

(insert this language if applicable) (name of owner or operator) will address load increases associated with new or expanded discharges from this facility by managing the aggregate delivered load discharged from all of the facilities under common ownership or operation in the (name of tributary) watershed..

(add this language when the facility assumes the influent flow from other permitted facilities; in other words, regionalizes)

This facility will treat wastewater currently being directed to other permitted treatment works. When the flow influent to (list facilities) is redirected to (name of permittee) and the discharge permits associated with these facilities has (have) been terminated, all or part of the delivered loads associated with these facilities will be assigned to (name of permittee) in the General VPDES Watershed Permit registration list to reflect this.

(add this language when the facility opts to purchase allocations from other permitted facilities)

This facility has elected to offset its future nutrient loads by acquiring waste load allocations from (insert name of seller(s)). The delivered load limits(s) of (insert name of seller(s)) have been reduced in the General VPDES Watershed Permit registration list to reflect this acquisition.

(add this language when the facility opts to purchase non-point reductions)

This facility has elected to offset its future nutrient loads by acquiring load reductions that were achieved by non-point best management practices. The inspection and verification of these reductions will be carried out pursuant to this individual VPDES permit.

(add this language when the facility opts to achieve its own offsets; note that this should be occurring only when the facility has made a bona fide demonstration that it could not offset the proposed discharge either by purchasing a waste load allocation from another permitted facility or by purchasing non-point load reductions)

This facility has elected to offset its future nutrient loads through a plan submitted to, and approved by, the Department. The inspection and verification of this offset will be carried out pursuant to this individual VPDES permit.

(add this language when the facility opts to purchase allocations from the WQIF; note that this should be occurring only when the facility has made a bona fide demonstration that it could not offset the proposed discharge either by purchasing a waste load allocation from another permitted facility or by purchasing non-point load reductions)

This facility has elected to offset its future nutrient loads by acquiring load reductions through the Water Quality Improvement Fund, and has provided evidence that it attempted, but was unable, to acquire the load reductions by other means.

When using this table for screening IP applications and preliminary engineering reports, work from left to right; the four left columns are provided by the permit writer, the four right columns outline the applicable requirements for the given situation.

Facility status	Existing design capacity (or equivalent load)	Proposed design capacity (or equivalent load)	Upstream or downstream of fall line	Requirement to register for WGP	Technology requirements *	Annual loading limits	Offset required
New	N/A	Q < 0.04 MGD	Either	None	*	None	None
		0.10 MGD > Q ≥ 0.04 MGD	Either	Must submit registration statement when applying for new IPt	*	Limit of zero in GP	100% of proposed load
		0.50 MGD > Q ≥ 0.10 MGD	Upstream		BNR		
			Downstream		LOT		
		Q ≥ 0.50 MGD	Either				
Expanding	Q < 0.04 MGD	Q < 0.04 MGD	Either	None	*	None	None
		0.10 MGD > Q ≥ 0.04 MGD	Either	Must submit registration statement when applying for modified or reissued IP	*	"permitted design capacity" calculated by regional permit staff and provided to Central Office for inclusion as limit in WGP	100% of proposed load above "permitted design capacity" calculated by regional permit staff
		0.50 MGD > Q ≥ 0.10 MGD	Upstream		BNR		
			Downstream		LOT		
		Q ≥ 0.50 MGD	Either				
	0.10 MGD > Q ≥ 0.04 MGD	0.10 MGD > Q ≥ 0.04 MGD	Either		BNR		
		0.50 MGD > Q ≥ 0.10 MGD	Upstream		BNR		
			Downstream		LOT		
		Q ≥ 0.50 MGD	Either				
	0.50 MGD > Q ≥ 0.10 MGD	0.50 MGD > Q ≥ 0.10 MGD	Upstream		BNR		
			Downstream	Prior to 1/1/07; must submit new registration statement when applying for modified or reissued IP	LOT	Loading limits in WGP	100% of proposed load above limit in WGP
	Q ≥ 0.50 MGD	Q ≥ 0.50 MGD	Either				
Existing	Q < 0.10 MGD	N/A	Either	None	*	None	None
	0.50 MGD > Q ≥ 0.10 MGD		Upstream	Prior to 1/1/07	*	Loading limits in WGP	
			Downstream		*		
	Q ≥ 0.50 MGD		Either				

- All discharges must be evaluated with regard to E3/E4 participation, currently installed technology, federal effluent guidelines or local water quality considerations irrespective of status, design flow or location. Unless the permittee provides a demonstration to the contrary, new and expanding facilities are required to install the appropriate treatment listed above. Technology based concentration limits for applicable new and expanded facilities and existing facilities performing upgrades are 8.00 mg/l TN and 1.00 mg/l TP for facilities installing BNR and 3.00 mg/l TN and 0.30 mg/l TP for facilities installing LOT.

SAMPLE TRANSMITTAL LETTER FOR REGISTRATION STATEMENT

Name and address -

RE: Registration for the General VPDES Permit for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Watershed in Virginia

Dear VPDES Permittee (or applicant):

9 VAC 25-820-10 et seq., General VPDES Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Watershed in Virginia was approved by the State Water Control Board on September 6, 2006 and became effective on November 1, 2006. The permit that is contained in the regulation has an effective date of January 1, 2007, and will expire on December 31, 2011. The permit regulation may be found at http://www.deq.virginia.gov/vpdes/pdf/9VAC25-820-NutrientDischargesGP-09-06-06.pdf.

In addition to the permit, registration for coverage under this WGP is required by law of every owner or operator of a new or expanding facility at the time he makes application with the Department for a new discharge or expansion that results in a discharge of 40,000 gallons or more per day from a sewage treatment work, or an equivalent load from an industrial facility.

(for applications for new construction and expansions, that are not currently accounted for in an permit, use the following paragraph)

The application for your permit cannot be processed without your concurrent registration for WGP coverage. Please submit the registration statement in order that permit processing may continue. Instructions for completing the registration form and an application fee form are included in this package. The application fee for this WGP is $600.00. Please follow the instructions on the fee form for submitting this fee.

(for new construction and expansions that are already accounted for in an permit, use the following paragraph)

Facilities that received permits for new or expanding facilities (or received Certificates to Construct for new or expanding treatment works) on or after July 1, 2005, are subject to this requirement. As the law and regulation require registration by the permit effective date (January 1, 2007), we request your immediate submittal of the registration statement. Instructions for completing the registration form and an application fee form are included in this package. The application fee for this WGP is $600.00. Please follow the instructions on the fee form for submitting this fee.

If you have any questions, please contact DEQ's Office of Water Permit Programs at (804) 698-4182.

Sincerely,

Permit Writer

Attachments:
- Registration Statement and instructions
- Permit Fee Form
- Summary of WGP monitoring and reporting requirements
- Summary of compliance plan requirements

SUMMARY OF MONITORING REQUIREMENTS

1. Discharges shall be monitored by the permittee, during weekdays, as specified below:

STP design flow	>20.000 MGD	1.000- 19.999 MGD	0.040-0.999 MGD
Effluent TN load limit for industrial facilities		>100000 lb/yr	487-99999 lb/yr
Effluent TP load limit for industrial facilities		>10000 lb/yr	37-9999 lb/yr
Parameter	**Sample Type and Collection Frequency**		
Flow	Totalizing, Indicating and Recording		
Nitrogen Compounds (Total Nitrogen = TKN + NO_2^- (as N) + NO_3^- (as N))	24 HC 3 Days/Week	24 HC 1/Week	8 HC 2/Month, > 7 days apart
Phosphorus Compounds (Total Phosphorus and Orthophosphate)	24 HC 3 Days/Week	24 HC 1/Week	8 HC 2/Month, > 7 days apart

2. Monitoring for compliance with effluent limitations shall be performed in a manner identical to that used to determine compliance with effluent limitations established in the individual VPDES permit, and monitoring or sampling shall be conducted according to analytical laboratory methods approved under 40 CFR Part 136 (2006), unless other test or sample collection procedures have been requested by the permittee and approved by the Department in writing. Monitoring may be performed by the permittee at frequencies more stringent than listed above; however, the permittee shall report all results of such monitoring.

3. Loading values reported in accordance with Part I, Paragraphs E and F of this WGP shall be calculated and reported to the nearest pound without regard to mathematical rules of precision.

4. Data shall be reported on a form provided by the Department, by the same date each month as is required by the facility's permit. The total monthly load shall be calculated in accordance with the following formula;

$$\mathbf{ML = ML_{avg} * d}$$

where:
ML = total monthly load (lb/mo)
ML_{avg} = monthly average load as reported on DMR (lb/d)
d = number of discharge days in the calendar month

$$\mathbf{ML_{avg} = \frac{\sum DL}{s}}$$

where:
DL = daily load, = daily concentration (expressed as mg/l to the nearest 0.01 mg/l) multiplied by the flow volume of effluent discharged during the 24-hour period (expressed as MGD to the nearest 0.01 MGD), multiplied by 8.3438 and rounded to the nearest whole number to convert to pounds per day (lbs/day)
s = number of days in the calendar month in which a sample was collected and analyzed

All daily concentration data below the quantification level (QL) for the analytical method used should be treated as half the QL. All daily concentration data equal to or above the QL for the analytical method used shall be treated as it is reported.

The total year-to-date mass load shall be calculated in accordance with the following formula:

$$\mathbf{AL\text{-}YTD = \sum_{(Jan\text{-}current\ month)} ML}$$

where:
AL-YTD = calendar year-to-date annual load (lb/yr)
ML = total monthly load (lb/mo) as reported on DMR

SUMMARY OF COMPLIANCE PLAN REQUIREMENTS

Within 9 months of the effective date of this regulation (August 1, 2007), every owner or operator of a facility required to submit a registration statement to the Department by January 1, 2007 shall either individually, or through the Virginia Nutrient Credit Exchange Association (doing business as the ExChange*), submit compliance plans to the Department for approval. The regulation currently contains final tributary-wide compliance dates for total nitrogen and total phosphorus of January 1, 2011.

The compliance plans *shall* contain any capital projects and implementation schedules needed to achieve total nitrogen and phosphorus reductions sufficient to comply with the individual and combined waste load allocations of all the permittees in the tributary as soon as possible. The compliance plans may rely on the exchange of point source credits in accordance with this WGP, but not the acquisition of credits through payments into the Water Quality Improvement Fund, to achieve compliance with the individual and combined waste load allocations in each tributary.

To aid the Department in its review, the compliance plans *should* include, for each discharger:

- Annual projections of:
  - Treated flows;
  - Nutrient concentrations, and
  - Nutrient loads
- Whether/how existing nutrient removal facilities can be optimized to aid in meeting reduced nutrient loads as soon as possible
- Whether phasing construction to achieve nutrient reductions sooner is viable
- (for POTWs only) Projected upgrade costs and estimated amount of WQIF funds needed
- (For municipal facilities only) A schedule addressing:
  - Selection of design engineer;
  - Submittal of Preliminary Engineering Report;
  - Submittal of plans and specifications;
  - Selection of construction firm;
  - Commencement of construction, and
  - Completion of construction
- (For industries only) A schedule addressing:
  - Submittal of Concept Engineering Report;
  - Commencement of construction, and
  - Completion of construction
- Description of how the following factors (§ 62.1-44.19:14.C.2 of the *Code of Virginia*) were considered in deriving implementation schedules at each facility:
  - Opportunities to minimize costs to the public or facility owners by phasing in the implementation of multiple projects;
  - Availability of required services and skilled labor;
  - Availability of funding from the Virginia Water Quality Improvement Fund as established in § 10.1-2128, the Virginia Water Facilities Revolving Fund as established in § 62.1-225, and other financing mechanisms;
  - Water quality conditions, and
  - Other relevant factors.
- Whether/how loads will remain under existing levels until basin cap load allocations achieved, especially if the construction schedule is extended

Permittees submitting individual plans are not required to account for other facilities' activities.

As part of the compliance plan development, permittees whose facilities would have complied with their individual waste load allocations for calendar year 2005, had the allocations been effective in that year, shall either:

a. Demonstrate that the additional capital projects are necessary to ensure continued compliance with these allocations through January 1, 2011, or

b. Request that their individual waste load allocations become effective on January 1, 2007. Permittees selecting this option shall be entitled to trade nutrient credits generated by their facilities and to acquire nutrient credits.

****The ExChange was authorized under § 62.1-44.19:17. of the Code of Virginia to coordinate and facilitate participation in the nutrient credit exchange program by its members. The ExChange is operating under a grant agreement to facilitate the submittal of compliance plans; while the ExChange serves in an advisory capacity, please note that per § 62.1-44.19:17. of the Code of Virginia, they are not permitted to assume any of the permittees' compliance obligations under the WGP.***

Additional information on the ExChange may be found at http://aqualaw.com/Documents/Exchange
User name: Exchange

- ***Password: Bank_It***

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

NOV 3 0 2006

Ms. Ellen Gilinsky, Ph.D.
Director of Division Water Quality Programs
Department of Environmental Quality
629 East Main Street
Richmond, VA 23219

Dear Ms. Gilinsky:

On September 6, 2006, the State Water Control Board approved the final regulation entitled "General Virginia Pollutant Discharge Elimination System (VPDES) Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed in Virginia," 9 VAC 25-820-10 et seq. On September 20, 2006, the Virginia Department of Environmental Quality (VADEQ) forwarded for the Environmental Protection Agency (EPA) review a submission that included the general permit regulation, fact sheet, and registration statement. EPA expects to complete this review within ninety (90) days of VADEQ's September 20, 2006 submission.

As part of this review, EPA requests VADEQ's position on the applicability of 9 VAC 25-820-30 ("Relation to existing VPDES permits issued in accordance with 9VAC 25-31"). Specifically, EPA is interested in clarifying whether and how the nutrient effluent limits contained in the general permit affect enforceable nutrient limits that are in already contained in individual VPDES permits. Following is the italicized text of 9 VAC 25-820-30 A., B., and C, followed by EPA's interpretation of these regulatory provisions.

A. This general permit shall control in lieu of conflicting or duplicative mass loading effluent limitations, monitoring or reporting requirements for total nitrogen and total phosphorus contained in individual VPDES permits for facilities covered by this general permit, where these requirements are based upon standards, criteria, waste load allocations, policy, or guidance established to restore or protect the water quality and beneficial uses of the Chesapeake Bay or its tidal tributaries.

EPA interprets 9 VAC 25-820-30.A to mean that mass loading effluent limits for total nitrogen or total phosphorus ("nutrient limits") in individual VPDES permits that are currently in effect and enforceable would remain so until the effective date of the nutrient limits in the general permit (i.e., no later than the January 1, 2011 "final effluent limits effective date"in Part I, Section A of the General Permit). Effective nutrient limits in individual permits would include water quality based limits such as prescribed by basin management plans, nutrient enriched waters designations, and Total Maximum Daily Loads (TMDLs) or Water Quality Improvement Fund (WQIF) projects or other grant stipulations that imposed nutrient treatment performance characteristics being expressed as mass effluent limitations.

B. This general permit shall not control in lieu of more stringent water quality-based effluent limitations for total nitrogen or total phosphorus in individual permits where those limitations are necessary to protect local water quality, or more stringent technology-based effluent concentration limitations in the individual permit for any facility that has installed technology for the control of nitrogen and phosphorus whether by new construction, expansion, or upgrade.

EPA interprets 9 VAC 25-820-30.B to mean that the nutrient limits in the general permit will not supercede either (a) more stringent water-quality based nutrient limits in individual permits needed to protect local water quality, or (b) more stringent technology-based effluent concentration limits in individual permits for facilities that have installed nutrient control technology.

C. The compliance schedule in this general permit shall control in lieu of conflicting or duplicative schedule requirements contained in individual VPDES permits for facilities covered by this general permit, where those requirements address mass loading of total nitrogen or total phosphorus and are based upon standards, criteria, waste load allocations, policy, or guidance established to restore or protect the water quality and beneficial uses of the Chesapeake Bay or its tidal tributaries.

EPA interprets 9 VAC 25-820-30.C to mean that the compliance schedule in the general permit replaces conflicting or duplicate compliance schedules for nutrient limits in individual VPDES permits, as specified. EPA further interprets this provision as only applying to individual permits' compliance schedules in which the final compliance date has not passed as of the effective date of the general permit.

It would be helpful to EPA's review of the general permit to know whether our interpretation of the regulatory language above accords with VADEQ's position. If you have any questions or comments on this matter, please feel free to contact me or Mark D. Smith at 215-814-3105 of my staff.

Sincerely,

David McGuigan, Ph.D.
Associate Director
Office of NPDES Permits & Enforcement